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=> d his

     (FILE 'HOME' ENTERED AT 16:12:48 ON 28 JAN 2008)

     FILE 'CA' ENTERED AT 16:13:01 ON 28 JAN 2008
L1             0 S 2000:193596/AN
L2             0 S 2000-193596/AN
                 E NONNINGER R
                 E NONNINGER R/AU
L3            50 S E3 OR E4 OR E5

=> s nanoparticle
L4         52343 NANOPARTICLE

=> s l3 and l4
L5            16 L3 AND L4

=> d 16

L5   ANSWER 16 OF 16  CA  COPYRIGHT 2008 ACS on STN
AN   131:313229  CA
TI   Wet chemical deposition of ATO and ITO coatings using crystalline
     nanoparticles redispersible in solutions
AU   Goebbert, C.; Nonninger, R.; Aegerter, M. A.; Schmidt, H.
CS   Department of Coating Technology, INM-Institut fur Neue Materialien,
     Saarbrucken, D-66123, Germany
SO   Thin Solid Films (1999), 351(1,2), 79-84
     CODEN: THSFAP; ISSN: 0040-6090
PB   Elsevier Science S.A.
DT   Journal
LA   English
RE.CNT  12    THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT


=> d 15 bib,ab

L5   ANSWER 15 OF 16  CA  COPYRIGHT 2008 ACS on STN
AN   133:45669  CA
TI   Preparation of nanoscale agglomerate-free maghemite suspensions
IN   Nonninger, Ralf; Jost, Martin
PA   Bayer A.-G., Germany; Institut Fuer Neue Materialien Gemeinnuetzige Gmbh
SO   Ger. Offen., 5 pp.
     CODEN: GWXXBX
DT   Patent
LA   German
FAN.CNT 1
     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------    --------
PI   DE 19859687           A1    20000629    DE 1998-19859687        19981223
PRAI DE 1998-19859687             19981223
AB   Nanoscale agglomerate-free maghemite (Fe2O3) suspensions are prepared from
     an aqueous solution containing FeSO4 and Fe2(SO4)3 in deionized O-free water
(with
     molar ratio Fe2+:Fe3+ of 1:2, and Fe ion concentration 0.1-1.1 mol/L) by
addition of
     NaOH (to molar ratio NaOH:Fe ion of 2.7-3), followed by washing of the
     precipitate, adjustment of the pH to 0.5-3, air oxidation at 60-100°C, and
     residual salt removal by dialysis.
RE.CNT  1     THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT


=> d bib,ab 14
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L5 ANSWER 14 OF 16 CA COPYRIGHT 2008 ACS on STN
AN 133:45670 CA
TI Suspensions of nanoscale rutile powders and their preparation
IN Nonninger, Ralph; Schichtel, Martin
PA Bayer A.-G., Germany; Institut Fuer Neue Materialien Gemeinnuetzige Gmbh
SO Ger. Offen., 5 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19859852	A1	20000629	DE 1998-19859852	19981223
PRAI DE 1998-19859852		19981223		

AB Aqueous suspensions of nanoscale rutile (TiO2) powders (<20 nm) containing 35-80 weight% solids and 10-25 weight% HCl are prepared by spraying liquid TiCl4 into aqueous HCl. The suspensions can be used in paints, lacquers, sun creams, dyes, pigments and catalysts, or for production of fine rutile powders.
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib,ab 13

L5 ANSWER 13 OF 16 CA COPYRIGHT 2008 ACS on STN
AN 133:74805 CA
TI Polyamide moldings containing nanoparticles of maghemite or magnetite
IN Nonninger, Ralf; Joachimi, Detlev; Klingelhoefer, Stefanie
PA Bayer A.-G., Germany; Institut Fuer Neue Materialien Gemeinnuetzige Gmbh
SO Ger. Offen., 5 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19859298	A1	20000629	DE 1998-19859298	19981222
PRAI DE 1998-19859298		19981222		

AB Polyamide moldings containing nanoparticles of maghemite or magnetite exhibit better color and gloss than similar moldings containing carbon black.

=> d bib,ab 12

L5 ANSWER 12 OF 16 CA COPYRIGHT 2008 ACS on STN
AN 134:211495 CA
TI Wet chemical deposition of crystalline, redispersable ATO and ITO nanoparticles
AU Goebbert, C.; Bisht, H.; Al-Dahoudi, N.; Nonninger, R.; Aegerter, M. A.; Schmidt, H.
CS Department of Coating Technology, INM-Institut fur Neue Materialien, Saarbruecken, D-66123, Germany
SO Journal of Sol-Gel Science and Technology (2000), 19(1/2/3), 201-204
CODEN: JSGTEC; ISSN: 0928-0707
PB Kluwer Academic Publishers
DT Journal
LA English
AB A new wet chemical concept to produce coatings by dip, spin or spray processes is presented. It is based on the preparation of solns. made of crystalline nanoparticles fully redispersable in a solvent. It is exemplified for the preparation of SnO2:Sb (ATO) and In2O3:Sn (ITO) transparent conducting coatings. The process combines the advantages of using particles having already a low resistivity and the possibility to sinter the coatings at

low temperature The particles are prepared using an in-situ monitoring of the surface energy to control the growth of the particles and to avoid their agglomeration. The dried powders can be fully redispersed in alc. (ITO) or water (ATO). Single layers with thickness up to 200 nm (ATO) and 400 nm (ITO) have been fabricated. The sheet resistance of the coatings decreases with the sintering temperature Typical values are 430 Ω for ATO (550°C) and 380 Ω for ITO (550°C). Sols made by redispersing the powders in organosilanes allow to produce coatings at low temperature with antistatic (R> 100 kΩ) and anti-glare properties (R> 100 kΩ, 60-80 gloss units).

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib,ab 11

L5 ANSWER 11 OF 16 CA COPYRIGHT 2008 ACS on STN
AN 137:126451 CA
TI Disinfectant coatings - Ag/TiO2-nanoparticles as high-efficiency biocides
AU Goebbert, Christian; Schichtel, Martin; Nonninger, Ralph
CS Saarbruecken, Germany
SO Farbe + Lack (2002), 108(7), 20-25
CODEN: FALAAA; ISSN: 0014-7699
PB Vincentz Verlag
DT Journal
LA German
AB Titanium dioxide nanoparticles, which are coated with a thin silver film, act in coatings systems as highly efficient innovative biocides. The particles are very stable, are easily incorporated in formulations and can be used in clear lacquers as they are optically transparent. In contrast to conventional disinfectants, the biocidal effect of such coatings lasts for years.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib,ab 10

L5 ANSWER 10 OF 16 CA COPYRIGHT 2008 ACS on STN
AN 137:267116 CA
TI Ceramic hollow fibers made of nanoscale particles by extrusion, spinning, and sintering
IN Nonninger, Ralph
PA Germany
SO Ger. Offen., 8 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 10114496	A1	20020926	DE 2001-10114496	20010325
PRAI DE 2001-10114496		20010325		

AB Procedure for the production of ceramic hollow fibers from nanoscale powders includes (a) mixing ceramic nanoparticles with an organic acid (e.g., dioxaheptanoic acid, trioxadecanoic acid), a solvent, and a polymer binder, (b) extruding at 10-30 MPa the obtained ceramic mass having a content of solids >20 volume%, preferably >30 volume%, (c) spinning, and (d) sintering the hollow fiber for 2 h at 950-1050°. The ceramic nanoparticles are selected from Al2O3, ZrO2, YSZ, TiO2, SiC, Si3N4, and WC. The solvent is selected from water, ethylene glycol, propylene glycol, or monoethyl ether and monobutyl ether of diethylene glycol. The polymer binder is selected from cellulose, methylcellulose, ethylcellulose, polyvinyl alc., amber gum, polyacrylate, or polymethacrylate, especially Lucirin and Laromer manufactured by BASF. The resulting

hollow fiber having an outside diameter of <500 μm, preferably <100 μm, is suitable for metal-, polymer-, and ceramic matrix reinforcements, for artificial organs, for building components of the micro system engineering, for light conductor optical fibers, for ceramic membranes/diaphragm, for the solid electrolyte in the fuel cell (SOFC), for tissue engineering and for the production extremely more easily, temperature-loading, ceramic building components such as heat shields or brake systems uses.

=> d bib,ab 9

L5 ANSWER 9 OF 16 CA COPYRIGHT 2008 ACS on STN
AN 137:314651 CA
TI Manufacture of functional nano-particle ceramic carrier layer on metal, glass and ceramic surfaces
IN Nonninger, Ralph; Binkle, Olaf
PA ITN-Nanovation G.m.b.H., Germany
SO Ger. Offen., 6 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10119538	A1	20021024	DE 2001-10119538	20010421
	DE 10119538	C2	20030626		
	WO 2002086194	A2	20021031	WO 2002-DE1453	20020419
	WO 2002086194	A3	20030530		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002315652	A1	20021105	AU 2002-315652	20020419
	EP 1383940	A2	20040128	EP 2002-740265	20020419
	EP 1383940	B1	20050323		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	CN 1503767	A	20040609	CN 2002-808537	20020419
	JP 2004530045	T	20040930	JP 2002-583704	20020419
	AT 291649	T	20050415	AT 2002-740265	20020419
	ES 2239233	T3	20050916	ES 2002-2740265	20020419
	US 2004115416	A1	20040617	US 2003-474983	20031009
	US 6953603	B2	20051011		
PRAI	DE 2001-10119538	A	20010421		
	WO 2002-DE1453	W	20020419		

AB The procedure is disclosed for the production of porous ceramic layers serving as carrier layer on metallic, ceramic, enamelled or glass substrates using crystalline nano-particles with particle sizes between 3-100 nm over a wet-chemical process, as well as functionalizing this porous ceramic layer by bringing a second component into the pores. Nanopowders of alumina, zirconia, YSZ, TiO2, boehmite, and iron oxide are used to form the porous ceramic layers. The porous, ceramic layers can be filled with a water repellent (e.g., fluorosilane), hydrophilic agent, degreasing agent, and corrosion inhibitor, be remained those in the substrate and/or delivered subsequently if necessary or be loaded with bactericides, aromas, perfumes, or inhalation materials, which are transferred targeted proportioned to the room air. For example, a suspension of nanopowder of yttria-stabilized zirconia or titania with trioxadecanoic acid in

polyvinyl alc. is deposited on a steel or Al substrate as a transparent layer, dried, and sintered for 1 h at 500° to form the porous ceramic layer on steel. The resulting articles having the porous carrier ceramic layers are suitable in medical instruments and devices.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib,ab 8

L5 ANSWER 8 OF 16 CA COPYRIGHT 2008 ACS on STN
AN 138:94179 CA
TI Procedure for the production of a core-shell particle, whereby the core is a nanoscale particle
IN Nonninger, Ralph
PA ITN-Nanovation G.m.b.H., Germany
SO Ger. Offen., 4 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10131173	A1	20030116	DE 2001-10131173	20010629
	DE 10131173	C2	20031204		
	DE 10164904	B4	20070510	DE 2001-10164904	20010629
	WO 2004020362	A1	20040311	WO 2002-EP9698	20020830
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002368195	A1	20040319	AU 2002-368195	20020830
	EP 1537060	A1	20050608	EP 2002-807705	20020830
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	JP 2005538016	T	20051215	JP 2004-531758	20020830
	US 2006154057	A1	20060713	US 2005-525700	20050825
PRAI	DE 2001-10131173	A3	20010629		
	WO 2002-EP9698	A	20020830		

AB The invention concerns a procedure for the production of core-shell particles, whose core consists of an inorg. nanoparticle, preferably TiO2, Fe2O3, SiO2, Al2O3, ZrO2, CeO2, SnO2, or ZnO. The cores that compose the nanoparticles have a primary particle size < 100 nm, preferably < 50 nm, and particularly preferably < 20 nm. The shell of the particle consists of an inorg. oxide/hydroxide, a metal, polymers or a glass. The core-shell particles can be used, for example, in biocide applications or as UV protection or luminescent pigments for water purification

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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